UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,422	02/06/2002	Mark Yarkosky	1653	9566

28005 7590 09/12/2006

SPRINT
6391 SPRINT PARKWAY
KSOPHT0101-Z2100
OVERLAND PARK, KS 66251-2100

EXAMINER	
MOORE JR, MICHAEL J	

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 09/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/068,422	YARKOSKY, MARK	
	Examiner	Art Unit	
	Michael J. Moore, Jr.	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24 and 26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,18-24 and 26* is/are rejected.

7)☒ Claim(s) *9-17* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 February 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because of the following informalities: *Figures 1-3* currently have some elements that are unclear due to being in handwritten form. It is suggested that a more formal version of these drawings be submitted in response to this Office Action.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency.

Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims **9-17** are objected to because of the following informalities:

Regarding claims **9-17**, on both of lines 15 and 21 of claim **9**, the term "energy-to-interface" should be "energy-to-interference". Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims **1, 4-8, 18, 19, 22-24, and 26** are rejected under 35 U.S.C. 102(b) as being anticipated by Love et al. (U.S. 6,034,971) (hereinafter "Love"). *Love* teaches all of the limitations of the specified claims with the reasoning that follows.

Regarding claim **1**, "measuring at least one level of interference over an air interface" is anticipated by the detection of frame error rate (interference) by a mobile station as spoken of on column 5, lines 9-11.

"Based on the at least one level of interference over the air interface, selecting a vocoder data rate for signals transmitted from a first entity to at least one second entity" is anticipated by the adjustment of the encoding rate (vocoder data rate) based upon the frame error rate detection as spoken of on column 5, lines 9-24.

Lastly, "causing the signals from the first entity to the at least on second entity to be transmitted at the vocoder data rate" is anticipated by vocoder 101 of Figure 1 that encodes channel information 120 according to an encoding rate adaptor 125 to produce encoded signal 121 as spoken of on column 6, lines 12-15.

Regarding claim **4**, "based on the at least one level of interference, selecting a transmit power for signals transmitted from the first entity to one of the at least one second entity, and causing the signals from the first entity to the one of the at least one second entity to be transmitted at the transmit power" is anticipated by the adjustment of the forward link power level in proportion to a ratio of the new and previous encoding rates as spoken of on column 5, lines 22-24.

Regarding claim **5**, "causing separate signals from one of the at least one second entity to the first entity to be transmitted at a separate transmit power" is anticipated by the adjustment of the forward link power level in proportion to a ratio of the new and previous encoding rates as spoken of on column 5, lines 22-24.

Regarding claim **6**, "causing separate signals from the at least one second entity to the first entity to be transmitted at a separate vocoder data rate" is anticipated by vocoder 101 of Figure 1 that encodes channel information 120 according to an encoding rate adaptor 125 to produce encoded signal 121 as spoken of on column 6, lines 12-15.

Regarding claim **7**, "wherein the first entity is a base station having at least one vocoder" is anticipated by system 100 of Figure 1 having vocoder 101.

Regarding claim **8**, "wherein the at least one second entity is a mobile station having at least one vocoder" is anticipated by system 100 of Figure 1 having vocoder 101.

Regarding claim **18**, "a base station" is anticipated by the system 100 (base station) of Figure 1.

"A processor" and "memory" is anticipated by adaptive encoding rate and gain adjust controller (AERGAC) 105 of Figure 1 that receives gain information 129 for determining power gain adjustor 124 and encoding rate adaptor 125 as spoken of on column 6, lines 46-48.

"A vocoder" is anticipated by vocoder 101 of Figure 1.

"Measuring at least one level of interference over an air interface" is anticipated by the comparison of a gain setting with a gain threshold by AERGAC 105 of Figure 1 in response to detection of a frame error rate (interference) as spoken of on column 5, lines 9-14.

"Based on the at least one level of interference over the air interface, selecting a data rate for signals transmitted from the base station to at least one entity" is anticipated by the adjustment of the encoding rate (data rate) based upon the frame error rate detection as spoken of on column 5, lines 9-24.

Lastly, "causing the signals from the base station to the at least one second entity to be transmitted at the data rate" is anticipated by vocoder 101 of Figure 1 that encodes channel information 120 according to an encoding rate adaptor 125 to produce encoded signal 121 as spoken of on column 6, lines 12-15.

Regarding claim **19**, "wherein the data rate is selected from the group consisting of approximately a full data rate and approximately a ½ rate" is anticipated by the full and ½ encoding rates spoken of on column 5, lines 31-32.

Regarding claim **22**, "based on the at least one level of interference, selecting a transmit power for signals transmitted from the base station to one of the at least one

entity, and causing the signals from the base station to the one of the at least one entity to be transmitted at the transmit power" is anticipated by the adjustment of the forward link power level in proportion to a ratio of the new and previous encoding rates as spoken of on column 5, lines 22-24.

Regarding claim **23**, "causing separate signals from one of the at least one entity to the base station to be transmitted at a separate transmit power" is anticipated by the adjustment of the forward link power level in proportion to a ratio of the new and previous encoding rates as spoken of on column 5, lines 22-24.

Regarding claim **24**, "causing separate signals from the at least one entity to the base station to be transmitted at a separate data rate" is anticipated by vocoder 101 of Figure 1 that encodes channel information 120 according to an encoding rate adaptor 125 to produce encoded signal 121 as spoken of on column 6, lines 12-15.

Regarding claim **26**, "wherein the at least one entity is at least one mobile station and the at least one mobile station comprises a vocoder" is anticipated by system 100 of Figure 1 having vocoder 101.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims **2, 3, 20, and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Love et al. (U.S. 6,034,971) (hereinafter "Love") in view of Kamel et al. (U.S. 6,697,343) (hereinafter "Kamel").

Regarding claims **2 and 20**, *Love* teaches the method of claim **1** as well as the base station of claim **18**.

Love also teaches how the frame error rate of a received signal is a function of energy per bit (Eb) divided over total noise and interference power spectral density (No) of the signal on column 3, lines 25-32.

Love does not explicitly teach where the level of interference measured is aggregate energy-to-interference over the air interface.

However, *Kamel* teaches a method of power control where a signal-to-noise ratio (energy-to-interference) is measured in relation to a vocoding rate in order to determine power adjustment data.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to combine the signal-to-noise ratio measurement teachings of *Kamel* with the vocoding rate adjustment teachings of *Love* in order to provide a balance between system capacity and signal quality.

Regarding claims **3 and 21**, *Love* teaches the method of claim **1** as well as the base station of claim **18**.

Love also teaches how the frame error rate of a received signal is a function of energy per bit (Eb) divided over total noise and interference power spectral density (No) of the signal on column 3, lines 25-32.

Love does not explicitly teach where the level of interference measured is energy-to-interference over the air interface.

However, *Kamel* teaches a method of power control where a signal-to-noise ratio (energy-to-interference) is measured in relation to a vocoding rate in order to determine power adjustment data.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to combine the signal-to-noise ratio measurement teachings of *Kamel* with the vocoding rate adjustment teachings of *Love* in order to provide a balance between system capacity and signal quality.

Allowable Subject Matter

7. Claims **9-17** are allowable over the prior art of record.

8. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim **9**, *Love* teaches the detection of a frame error rate and the subsequent adjustment of an encoding rate on column 5, lines 19-22. *Love* also teaches the adjustment of the power level of the forward link in proportion to a ratio of new and previous encoding rates on column 5, lines 22-24.

Love fails to teach the following method: measuring an aggregate energy-to-interference of an air interface between a base station and plural mobile stations; where if this measurement is greater than an aggregate set point, then a first data rate is selected for transmitted signals from the base station to the plural mobile stations; where if this measurement is less than the aggregate set point, then an energy-to-

interference measurement of the air interface between the base station and one mobile station is performed, and based on whether this measurement is less than or greater than an individualized set-point, either a transmit power for transmitted signals from the base station to the one mobile station is selected, or a second data rate for transmitted signals from the base station to the one mobile station is selected, respectively.

Regarding claims **10-17**, these claims are further limiting to claim **9** and are thus also allowable over the prior art of record.

Response to Arguments

9. Applicant's arguments with respect to claims **1-8, 18-24, and 26** have been considered but are moot in view of the new ground(s) of rejection provided above.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Karabinis et al. (U.S. 6,859,652) is another reference considered pertinent to this application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Moore, Jr. whose telephone number is (571) 272-3168. The examiner can normally be reached on Monday-Friday (8:00am - 4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached at (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael J. Moore, Jr.
Examiner
Art Unit 2616

mjm MM

Seema S. Rao
SEEMA S. RAO 9/8/06
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600